

## REMARKS/ARGUMENTS

### 35 USC § 103(a)

Reconsideration and allowance are requested of Claims 77-81, 83, 84-89, 99, and 122 which the Examiner rejected under 35 USC § 103(a) as being unpatentable over combinations of van Loon, Kenneally, and Peter. Allowance is requested of claims 198 and 225 which were not rejected or objected to in the most recent Office Action. Allowance is requested of new claims 227 and 228.

#### Claim 77

In ascertaining the differences between the prior art and the claims in issue, Applicant submits that the cited prior art does not teach or suggest all of the claim limitations. Specifically, claim 77 claims the step of purifying the fatty acid alkyl ester rich stream by distillation or fractionation to produce purified biodiesel without subjecting the fatty acid alkyl ester rich steam to water washing.<sup>1</sup> Applicant submits that this claimed purification process is not taught or suggested in any of the cited prior art.

The Examiner concedes that van Loon does not disclose the step of purifying the fatty acid alkyl ester rich stream by distillation to produce biodiesel as claimed in Applicant's step (D) of claim 77. (Office Action Dated December 10, 2009, p. 3). The

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<sup>1</sup> Paragraph 0053 of Applicant's specification states, "[a]nother object of the preferred embodiments of the present invention is the use of distillation rather than water washing as a means to purify FAMEs." (emphasis added). See paragraphs 0053, 0199, 0206, 0213, 0220, and 0227 for further specification support of this limitation.

Examiner also concedes that Kenneally “does not disclose the acid number and glycerin content” claimed in claim 77. (Office Action Dated December 10, 2009, p. 3). Even so, the Examiner uses Kenneally to reject this limitation by stating that that Kenneally discloses distillation “conditions [that] are similar” to those claimed in Applicant’s step (D). (Office Action Dated December 10, 2009, p. 3). Applicant disagrees.

First, Applicant submits that the chemical arts are deemed an “unpredictable” art such that the Examiner cannot assume that similar conditions lead to similar results. The Federal Circuit Court recently stated, “[t]o the extent an art is unpredictable, as the chemical arts often are, KSR's focus on these “identified, predictable solutions” may present a difficult hurdle because potential solutions are less likely to be genuinely predictable.” Eisai Co. Ltd. v. Dr. Reddy's Laboratories, Ltd., 533 F.3d 1353, 1359 (Fed. Cir. 2008). Applicant respectfully submits that the Examiner’s unsupported assumption of Kenneally’s similar conditions is an erroneous and, further, does not provide a proper basis for rejection.

Second, Applicant submits that the conditions and process of claim 77 are patently distinguishable from the cited prior art. Applicant has amended claim 77 to clarify that the process of claim 77 is practiced by purifying the fatty acid alkyl ester rich stream without subjecting the stream to water washing. Directing the fatty acid alkyl ester rich stream to the distillation or fractionation purifying step without first subjecting it to a water washing step has not previously been accomplished to Applicant’s knowledge. In contrast, the process in Kenneally (and van Loon) is practiced by subjecting the stream to water washing prior to the distillation purification

step. Contrary to the Examiner's assumption, the additional water washing step of Kenneally creates conditions that are patently distinguishable from Applicant's claim 77. For example, water washing removes by-products such as glycerin, which substantially changes the chemical composition of the product stream that thereafter undergoes purification by distillation. Since Applicant's claimed purification step occurs under substantially different chemical conditions, Applicant submits that claim 77 and its dependent claims are patentable over the cited prior art.

#### Claims 77 and 227

As discussed above, Applicant's invention eliminates the water washing process which both Kenneally and van Loon disclose as a precursor to the purification step of the process taught by each reference. Accordingly, Applicant has amended claim 77 to include a limitation wherein the purification step is accomplished without subjecting the fatty acid alkyl ester rich stream to water washing. Applicant has drafted new claim 227 which is similar to claim 77 and includes this new limitation, but it does not include the specific parameters of the purified biodiesel in step (D). Applicant submits that a review of the cited prior art establishes that none of the cited references teach or suggest a distillation or fractionation step which purifies the acid alkyl ester rich stream without first submitting the stream to a water wash step.<sup>2</sup> Applicant's claimed invention is beneficial over prior art for at least several reasons. First, elimination of the water

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<sup>2</sup> The Examiner states that van Loon discloses separating the fatty acid alkyl esters from the glycerin by water washing. (Office Action Dated December 10, 2009, p.3). See also, van Loon, column 3, lines 19-27

washing process prior to the distillation step reduces the demand on water resources for the manufacturer and, further, is environmentally friendly in conserving natural resources. Second, processes using a water washing process prior to distillation (such as the water washing process described in Kenneally) results in chemicals remaining immersed within the washing waste water thereby presenting an environmental hazard and, further, imposing the requirement upon the manufacturer to appropriately treat and clean the waste water after the washing process is completed. Further, the treatment of waste water can be expensive to the manufacturer, especially for biodiesel plants that have not constructed waste water treatment facilities on-site as those manufacturers would be required to ship the waste water off-site for treatment. Thus, Applicant submits that since none of the cited prior art teaches or suggests a purification step that occurs without first subjecting the product stream to a water washing step, claims 77 and 227 are allowable.

Claims 198 and 225

Applicant submits that pending claims 198 and 225 are free from any rejection or objection in the prior Office Action and are therefore allowable. Applicant has rewritten these claims in independent format to put them in condition for allowance.

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(“for instance, by drawing off and washing.”) Kenneally discloses water washing throughout its specification, specifically in column 6, lines 3-36.

### Conclusion

It is respectfully submitted that this response places Applicant's application in condition for allowance, and therefore further and favorable action on this application is requested. If for any reason the Examiner has any questions about these claims, Applicant's attorney respectfully requests the Examiner to contact Applicant's attorney by telephone to set up an interview. It is believed that such an interview will be helpful in placing the application in condition for allowance.

Respectfully submitted,

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June 9, 2010

#### CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office by EFS-Web on June 9, 2010.

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